



# SmartCI Research Center

## 5<sup>th</sup> Call for Concept Paper

Date: Aug 1<sup>st</sup>, 2015



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## 1. Introduction

**Virginia Tech-Middle East & North Africa (VT-MENA)** project is a partnership between Virginia Polytechnic Institute and State University and the Egyptian Ministry of Higher Education that aims to establish sustainable Center of Academic Excellence (CAE) for research & graduate studies and resident Collaborative Degree Programs (CDPs) in Egypt. This would help Egypt to meet the serious demand for qualified faculty and professionals in areas of modern technology and sciences as well as facilitate cultural exchange between USA and Egypt.

Due to serious need for the development of scientific research systems in Egypt, VT-MENA established **Smart Critical Infrastructure (SmartCI) research center** in June 22<sup>nd</sup>, 2013. This center aims to follow the international successful model of the integration between the academic research and industry. Specifically, Smart Critical Infrastructure (SmartCI) Research Center should provide innovative solutions for the main Egyptian problems in transportation, educational systems, food, agriculture, power systems, and emergency services. Furthermore, it comprises a public-private partnership to provide a pioneering engineering and science education model through integrated research and technology transfer services (including education, training, consulting, and technology assimilation into the society) to resolve challenges facing the ever-evolving and increasingly essential integration of Communications and Information Technology and Critical Infrastructure resources and services.

Key to enhancing efficiency, dependability, and security of Critical Infrastructure services is the deep integration of computing, communications and information throughout the massive-scale Critical Infrastructure systems. Such integration promises a wide ranging impact on Critical Infrastructure services, from enabling information sharing and complex system simulation and analysis, to enhancing device control and adaptation, to facilitating resilient system operation, recovery and evolution. This will lead not only to advancing existing Critical Infrastructure services but also to emerging new ones.

**With the SmartCI goals in mind, SmartCI Research Center invites concept paper in research areas of interest in Section (3) of this document. SmartCI Research Center is planning to incubate up to 8 research teams in this cycle to write their research proposals through monthly research incentive of 1500 EGP for each team member. Furthermore, a maximum award of 10000 EGP may be offered to some teams upon proposal acceptance from the target funding agency according to their proposed project topic and team performance during proposal writing period.**



## 2. Background

Infrastructure in Egypt has been falling back over the last ten years which makes it impossible to be fixed and improved over short term plans. Moreover, the increase in population, slums, poor planning, random solutions in fixing issues and using imported solutions which are often inappropriate solutions make things more complicated.

Moreover, despite of the fast development of Information and Communication Technology, it did not have the significant impact on our critical infrastructure. Due to the foundation of part of the infrastructure before the fast development of the Information and Communication Technology in addition to poor planning, ignoring development and using imported solutions.

Thus, the first and most important step to develop Critical Infrastructure in Egypt is to integrate Information and Communication Technology in order to build research knowledge base that can watch, secure and control elements of this infrastructure.

## 3. SmartCI Research Areas of Interest

SmartCI Research Center targets solutions to real problems facing the Egyptian Society through applied research projects that integrate Communications & Information Technology into Critical infrastructure Systems.

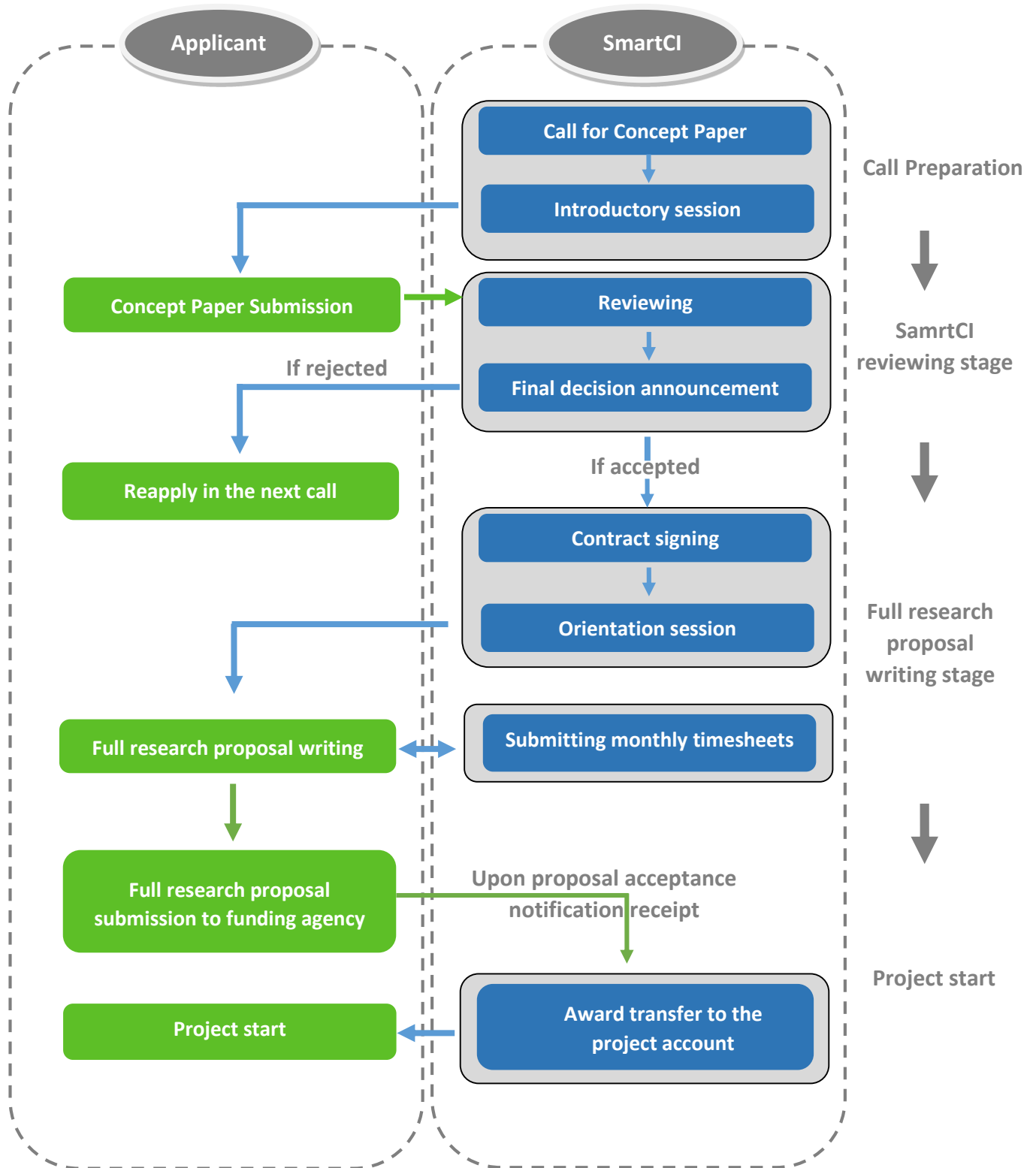
### **Proposed Projects must lie within the following areas:**

- ICT for Health
- ICT for Transportation
- ICT for Agriculture
- ICT for the Disabled
- ICT for Education
- ICT for Energy
- Electronic Design for ICT Applications

## 4. Application Procedure

- **Research Teams should:**
  - ✓ find funding opportunities for their ideas with the help of SmartCI administration team.
  - ✓ prepare concept papers to clarify their ideas to SmartCI Research Center  
(The team should use concept paper template on SmartCI Research Center official website: <http://smartci.alexu.edu.eg/?cat=16>)
  - ✓ submit their concept papers to SmartCI Research Center according to submission guidelines and deadline described in sections (9 and 10) of this document.
- **Upon concept paper approval:**
  - ✓ PI signs contract with SmartCI.
  - ✓ SmartCI offers a monthly research incentive of 1500 EGP/ team member for up to five months or up to their full research proposal submission to the target funding agency (**the sooner of them**).
  - ✓ Administrative and financial team will help in the submission process to funding agencies as needed by the Research team.
- **Upon the receipt of funding agency acceptance notification:**
  - ✓ SmartCI Research Center will offer an award of maximum 10000 EGP for some teams according to their proposed project topic and team performance during proposal writing period.
  - ✓ SmartCI Research Center signs the agreement with the funding agency.
  - ✓ SmartCI Research Center signs an agreement with the research team Principal Investigator (PI).
  - ✓ SmartCI administrative and financial team take full responsibility of all research administration aspects of the research proposal.

**The chart in the next page summarizes the call procedure starting from the call opening to the research project start.**



## 5. Benefits gained by SmartCI Research Center affiliates

### 5.1. Upon Concept paper acceptance

- applicants will be awarded with 1500 EGP/month for a period up to five months or until their full research proposal submission (**the sooner of them**);
- some funding agencies award their funds to nonprofits rather than to individuals, affiliating yourself to SmartCI Research Center can increase your likelihood of receiving funding;
- SmartCI offers
  - ✓ access to existing equipment and good working environment for research;
  - ✓ technical editor;
  - ✓ Research Writing Room for applicants to write their research proposal, equipped with:
    - wifi and 3G connection
    - printers (laser all in one, laser black and officejet color)
    - white boards
    - servers

### 5.2. Upon Full proposal acceptance, SmartCI offers:

- maximum award of 10000 EGP may be offered to some research teams according to their proposed project topic and team performance during proposal writing period;
- tax-exempted fund as SmartCI Research Center is a non-profit, governmental center, which is saving the project an essential start-up fee;
- experienced financial management for your fund by SmartCI Research Center whereas some projects require your spending considerable time administering the funds.

## 6. Team Eligibility

- The PI must be a Ph.D. holder.
- The team must contain at least 1 Research Assistant (Ph.D. / MSc candidate) in addition to the PI.
- The team cannot include undergraduate students in the proposal writing period.
- Any concept paper that does not involve team contribution will be excluded.
- The team may include more than three members, however SmartCI Research Center will fund up to **three** members per month for full research proposal writing.
- Applicants who signed contracts with SmartCI during the previous 4 calls for concept paper may apply as PIs or research team members in this call but only **new members who have not been funded during the previous 4 calls will receive incentives.**

## 7. General Rules and Obligations

- Projects should be related to **SmartCI** development.
- Full research proposal preparation period should not exceed **five** months.
- Concept Paper should not exceed **twelve** pages including the cover page and references.
- Title to any equipment or supplies purchased or manufactured in the performance of the project shall vest in SmartCI Research Center.
- Overhead cost of the fund shall be transferred to SmartCI Research Center to be used in return of facilities and services offered by SmartCI.
- SmartCI will acquire IP share of any filed patents.

## 8. Evaluation

### 8.1. Criteria

- Relevance and eligibility to funding agency
- Relevance to SmartCI theme
- Importance of the proposal to industry and society
- Research Methodology
- Task distribution over team members
- Timeline for full proposal writing
- Team members' qualifications and profiles
- Importance of expected outcomes and liability for publication



## 8.2. Decision

According to the above criteria, reviewing panel make their final decision and PIs receive decision letters include one of the following decisions:

- **Accepted:** without any changes.  
**Accepted with minor changes:** applicant is requested to make minor change and resubmit a revised version for the same cycle.
- **Rejected:** with recommendation to resubmit in the next call after addressing weaknesses clarified in the decision letter/ or the idea is not accepted for reasons clarified in the decision letter.

## 9. Timeline

- Concept paper submission opens: **August 1<sup>st</sup>, 2015**
- Concept paper submission deadline: **August 31<sup>st</sup>, 2015**
- Final decision announcement: **September 30<sup>th</sup>, 2015**
- Revised concept paper submission deadline: **October 8<sup>th</sup>, 2015**
- Contracts signing on: **October 20<sup>th</sup>, 2015**
- Hosting researchers for proposal writing starts on: **November 1<sup>st</sup>, 2015**

## 10. Submission Guidelines

- Applicants should submit their concept paper electronically on the website through the following link: <http://smartci.alexu.edu.eg/?cat=16>
- Concept paper to be uploaded in PDF format, file name should be **“PI’s name\_ short name for the proposal”**
- Any submissions after the submission deadline will be excluded.
- Inquiries and questions regarding this Call for Concept Paper are to be directed to **Eng. Esraa Moustafa, SmartCI Research Administration** at [smartci\\_q@mena.vt.edu](mailto:smartci_q@mena.vt.edu).

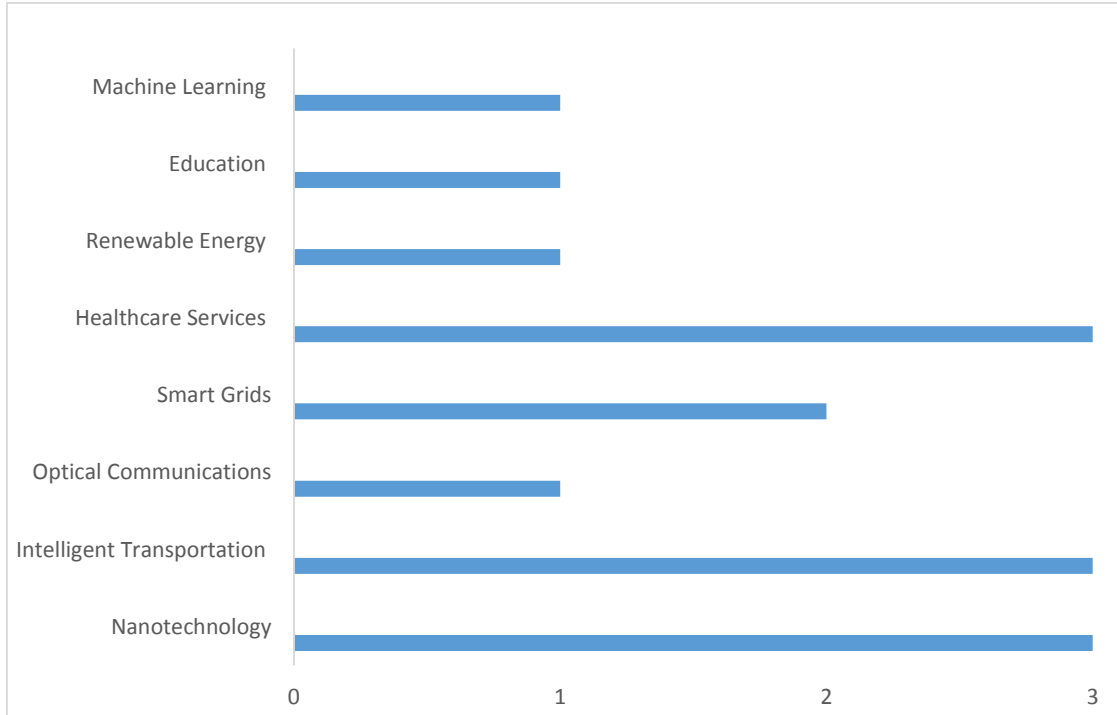


## Appendix I

### SmartCI Facts...

- The 1<sup>st</sup> call was within limited scope in Faculty of Engineering, Alexandria University.
- The 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> calls were within faculties of Alexandria University.
- SmartCI offered a number of research seminars and workshops for researchers during their proposal writing period.
- SmartCI hosted 15 proposal writings during 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> calls for concept paper in different research areas.
- Researchers at SmartCI submitted 15+ proposals to different national and international funding agencies, such as Microsoft, NTRA, STDF, ITIDA (ITAC program).
- Now, SmartCI is incubating 14 funded research projects with total budget of 13 million EGP (7.5 million for equipment) from NTRA, STDF, AlexRep, ALEXENG, and ITIDA (ITAC program).
- Currently, SmartCI is establishing:
  - Nanotechnology Lab
  - High Performance Computing Lab
  - Cognitive Radio Lab (communications and networking)
  - Optical Communications Lab

### Proposal Writings Research Areas



### Funded Research Project

